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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,192	09/09/2003	Taro Yajima	031112	1622
23850	7590	09/28/2006	EXAMINER	
ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006			MCDONALD, RODNEY GLENN	
			ART UNIT	PAPER NUMBER
			1753	

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/657,192

Applicant(s)

YAJIMA ET AL.

Examiner

Rodney G. McDonald

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-13, 15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11, 12, 15 and 16 is/are allowed.
- 6) ☒ Claim(s) 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action: .

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Ohno et al. (U.S. Pat. 4,851,668).

Ohno et al. teach a method of vacuum processing comprising the steps of ionizing a gas (i.e.  $\text{CF}_4$ ) in an ionization chamber 1 by providing an alternating current from a high frequency coil 9 to the gas to generate a plasma. A positive voltage is applied to a first electrode 7 in the vicinity of an opening of the ionization chamber. A negative voltage is applied to a second electrode 8 disposed farther from the ionization chamber than the first electrode 7. Positive ions are released into a vacuum chamber 2 the positive ions being extracted by the first and second electrodes 7 and 8 for producing an ion beam. Electrons are released into the chamber by electron beam generator 15 to neutralize (i.e. prevent charge accumulation). The neutralized positive ions are irradiated onto a target object 12. The plasma is regenerated in the chamber 1 by emitting electrons from the generator 15 by controlling the potential of the electrodes 7 and 8 such that electrode 8 is place at ground potential and electrode 7 has a higher positive voltage to draw the electrons into the chamber 1 for regenerating the plasma.

This elongates the operation of the device. (Column 2 lines 42-68; Column 3 lines 1-64)  
(Compare this to Applicant's specification Pages 19 lines 7-25; Page 20 lines 1-2)

***Allowable Subject Matter***

Claims 11, 12, 15 and 16 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 11, 12, 15 and 16 are allowable over the prior art of record because the prior art of record does not teach a detecting device for detecting disappearance of plasma; and first and second variable inductance elements, wherein the first variable inductance element comprises a first main winding, a first control winding magnetically coupled to the first main winding, wherein the second variable inductance element comprises a second main winding, and a second control winding magnetically coupled to the first main winding, wherein the first and second main windings are controlled based on a magnitude of direct current flowing through the first and second control windings respectively, wherein the RF source is connected to the plasma generator via the first main winding and the RF source is connected to ground voltage via the second main winding, wherein the plasma generator generates plasma by RF voltage outputted from the RF source, and wherein the disappearance of the plasma is detected by the detecting device, the direct current flowing through the second control winding is decreased in order to increase the inductance of the second main winding larger than its inductance when plasma is maintained, and then, the RF voltage outputted to the plasma generator is increased.

***Response to Arguments***

Applicant's arguments filed July 12, 2006 have been fully considered but they are not persuasive.

In response to the argument that Ohno does not teach that electrons generated by the electron beam generator are attracted into the ionization chamber when plasma is regenerated, it is argued that the potential of the electrode 7 will control the flow of electrons into the ionization chamber when the plasma is regenerated. See Ohno et al. Column 2 lines 58-59.

The remainder of the claims are allowed based on the fact that the prior art does not teach the detection by the detector to detect the disappearance of the plasma wherein when the disappearance of the plasma is detected by the detecting device, the direct current flowing through the second control winding is decreased in order to increase the inductance of the second main winding larger than its inductance when plasma is maintained, and then, the RF Voltage outputted to the plasma generator is increased.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

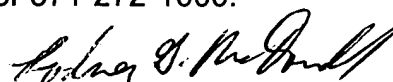
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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M- Th with Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Rodney G. McDonald  
Primary Examiner  
Art Unit 1753

RM  
September 25, 2006